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Filed : October 19, 2004

REMARKS

Claims 1 and 8-31 have been cancelled. Claims 2, 3, 6, and 7 have been amended. New claims 32-55 are added. Claims 32-43 correspond to original elected Group II claims 12-23 which were erroneously cancelled in response to the restriction requirement. Support for the amendments and new claims 44-55 is found in the existing claims and the specification as discussed below. Accordingly, the amendments do not constitute the addition of new matter. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Rejection under 35 U.S.C. § 101

Claims 2-4 and 6 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

This ground of rejection is believed to be overcome by amendment of claims 2-4 to recite “recombinant DNA” and by amendment of claim 6 to recite “an isolated host cell” as suggested by the Examiner.

In view of Applicants’ amendments, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

Rejection under 35 U.S.C. § 112, second paragraph

Claims 2-7 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action states that the term “stringent” is indefinite because while the specification describes certain conditions as stringent, there is nothing to suggest that other conditions might also be included in the scope of this term.

Applicants have cancelled the subject matter of claim 3 part b which relates to stringent conditions and replaced claim 3 part b with new claim 44. Claim 44 defines stringent conditions as consisting of 1 x SSC, 0.1% SDS, and 60 °C. Support is found on page 10, line 6. Accordingly, Applicants submit that both claim 3 and new claim 44 are definite.

In view of Applicants’ amendments, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

Rejection under 35 U.S.C. § 112, first paragraph –Written Description

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Claims 2 and 3-7 are rejected under 35 U.S.C. § 112, first paragraph as containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s) had possession of the claimed invention at the time that the application was filed.

The Office Action states that the claims encompass a genus of DNA molecules with either SEQ ID NO: 15 or any variant thereof which will hybridize to SEQ ID NO: 15 or DNA encoding a protein having the amino acid sequence of 23-425 of SEQ ID NO: 16 and any protein variant having up to 20 amino acids altered. The Office Action states that the single species disclosed in the specification is insufficient to put one of skill in the art in possession of the attributes and features of all species within the claimed genus.

Applicants traverse this ground of rejection by amendment and by the following arguments.

Claim 2 has been amended to delete the language that the protein has a substitution, deletion, insertion or addition of 1-20 amino acids in a protein with at least the amino acid sequence comprising amino acids 23 to 425 of SEQ ID NO: 16. Claim 3 has been amended to delete part (b), directed to the hybridization conditions. Accordingly, Applicants submit that claims 2-3 (and claims dependent thereon) meet the requirements of 35 U.S.C. § 112, first paragraph with respect to written description.

New claim 44 and dependent claims 45-55 are submitted herewith. New claim 44 is directed to a recombinant DNA which is hybridizable under stringent conditions with a nucleotide sequence consisting of nucleotides 187 to 1398 of SEQ ID NO: 15. The stringent conditions are clearly set forth in the claim as including 1 x SSC, 0.1% SDS, and 60 °C as described in the specification at page 10, line 6. Furthermore, the recombinant DNA of claim 44 has 90% or more homology to SEQ ID NO: 15 and may have a substitution, deletion, insertion or addition of 1 to 5 amino acid residues in a protein which includes amino acids 23 to 425 of SEQ ID NO: 16. Support is found in the present specification at page 8, line 29 and page 10, line 5.

Applicants respectfully submit that claim 44 meets the Written Description requirement. While the Office Action asserts that the specification is limited to a nucleotide that encodes the amino acid sequence of only one glucose dehydrogenase β subunit species, the specification teaches at least one additional species. The Examiner's attention is directed to the specification

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at page 26, second to last paragraph that teaches that *Burkholderia cepacia* J2315 has a gene encoding the β subunit of glucose dehydrogenase which has 92.2% homology to the amino acid sequence of the β subunit from *Burkholderia cepacia* KS1, which corresponds to SEQ ID NO: 16. This homology corresponds to about 33 amino acid substitutions. Therefore, one skilled in the art can clearly obtain variants or mutants having 1 to 5 amino acid substitutions as now claimed without explicit guidance. Based upon the teaching in the specification, a DNA encoding a protein having a substitution, deletion, insertion or addition of 1 to 5 amino acid residues in the protein which has at least the amino acid sequence comprising amino acids 23 to 425 of SEQ ID NO: 16, in addition to the additional limitations of claim 44, would clearly share the attributes and features of the glucose dehydrogenase β subunit of *Burkholderia cepacia* KS1.

In view of Applicants' amendments and arguments, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

Rejection under 35 U.S.C. § 112, first paragraph - enablement

Claims 2, and 3-7 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for the DNA of SEQ ID NO: 15 or a DNA encoding SEQ ID NO: 16, does not reasonably provide enablement for any DNA which will hybridize to SEQ ID NO: 15 under stringent conditions or any DNA encoding a variant of SEQ ID NO: 16 having 20 amino acids altered.

This ground of rejection is addressed by the amendments and arguments as discussed above.

Claim 2 has been amended to delete the language that the protein has a substitution, deletion, insertion or addition of 1-20 amino acids in a protein with at least the amino acid sequence comprising amino acids 23 to 425 of SEQ ID NO: 16. Claim 3 has been amended to delete part (b), directed to the hybridization conditions. Accordingly, Applicants submit that claims 2-3 (and claims dependent thereon) meet the requirements of 35 U.S.C. § 112, first paragraph with respect to written description.

New claim 44 and dependent claims 45-55 are submitted herewith. New claim 44 is directed to a recombinant DNA which is hybridizable under stringent conditions with a nucleotide sequence consisting of nucleotides 187 to 1398 of SEQ ID NO: 15. The stringent conditions are clearly set forth in the claim as including 1 x SSC, 0.1% SDS, and 60 °C as

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described in the specification at page 10, line 6. Furthermore, the recombinant DNA of claim 44 has 90% or more homology to SEQ ID NO: 15 and may have a substitution, deletion, insertion or addition of 1 to 5 amino acid residues in a protein which includes amino acids 23 to 425 of SEQ ID NO: 16. Support is found in the present specification at page 8, line 29 and page 10, line 5.

Applicants respectfully submit that claim 44 meets the enablement requirement. While the Office Action asserts that the specification is limited to a nucleotide that encodes the amino acid sequence of only one glucose dehydrogenase β subunit species, the specification teaches at least one additional species. The Examiner's attention is directed to the specification at page 26, second to last paragraph that teaches that *Burkholderia cepacia* J2315 has a gene encoding the β subunit of glucose dehydrogenase which has 92.2% homology to the amino acid sequence of the β subunit from *Burkholderia cepacia* KS1, which corresponds to SEQ ID NO: 16. This homology corresponds to about 33 amino acid substitutions. Therefore, one skilled in the art can clearly obtain variants or mutants having 1 to 5 amino acid substitutions as now claimed without explicit guidance. Based upon the teaching in the specification, a DNA encoding a protein having a substitution, deletion, insertion or addition of 1 to 5 amino acid residues in the protein which has at least the amino acid sequence comprising amino acids 23 to 425 of SEQ ID NO: 16, in addition to the additional limitations of claim 44, would clearly share the attributes and features of the glucose dehydrogenase β subunit of *Burkholderia cepacia* KS1.

In view of Applicants' amendments and arguments, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

Rejection under 35 U.S.C. § 112, first paragraph -enablement

Claims 6-7 are further rejected under 35 U.S.C. § 112, first paragraph because the specification, while being enabling for an isolated host cell transformed with the synthetic nucleic acid, does not reasonably provide enablement for host cells within a multicellular organism that have been transformed with the synthetic nucleic acid.

This rejection is believed to be overcome by Applicants' amendment of claims 6-7 to recite "An isolated host cell" as suggested by the Examiner.

In view of Applicants' amendment, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

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Rejection under 35 U.S.C. § 102(a)

Claims 2-7 are rejected under 35 U.S.C. § 102(a) as being anticipated by Inose, et al. (Biochim. Biophys. Acta, Dec. 3, 2002, 1645, pages 133-138).

This ground of rejection is believed to be overcome by the certified translation of Applicants' priority document which is submitted herewith as Attachment A. The filing date of the priority application predates the Inose, et al. reference.

In view of Applicants' certified translation of their priority document submitted herewith, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

CONCLUSION

In view of Applicants' amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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